

# REPLACEMENT SHEET 6

Atty Docket No.: SI1-2627-U-C5

Serial No.: 10/066,408 Filing Date: 01/30/02

Applicant: EASTERBROOK, Eric T. Title: METHOD AND

APPARATUS FOR IMPROVING THE FATIGUE LIFE et al

Call: R. Reams Goodloe, Jr. Reg. #32,466

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FIG. 26

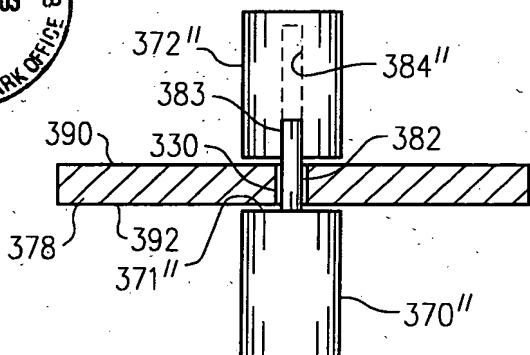


FIG. 27

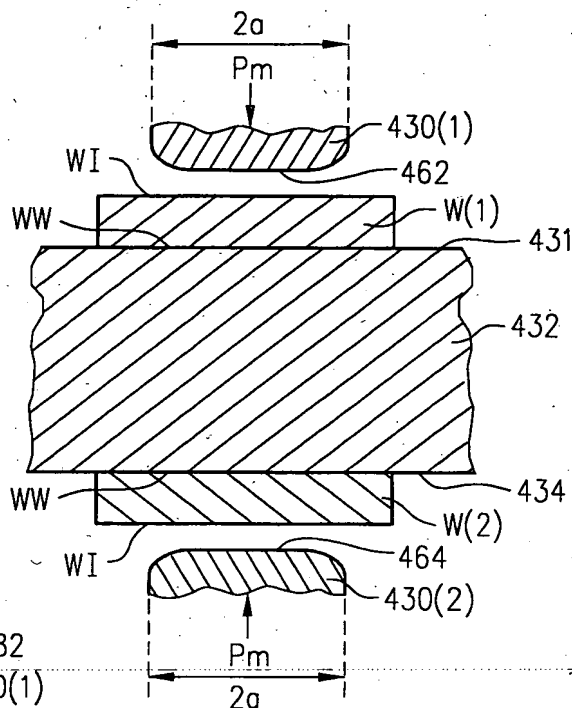


FIG. 28

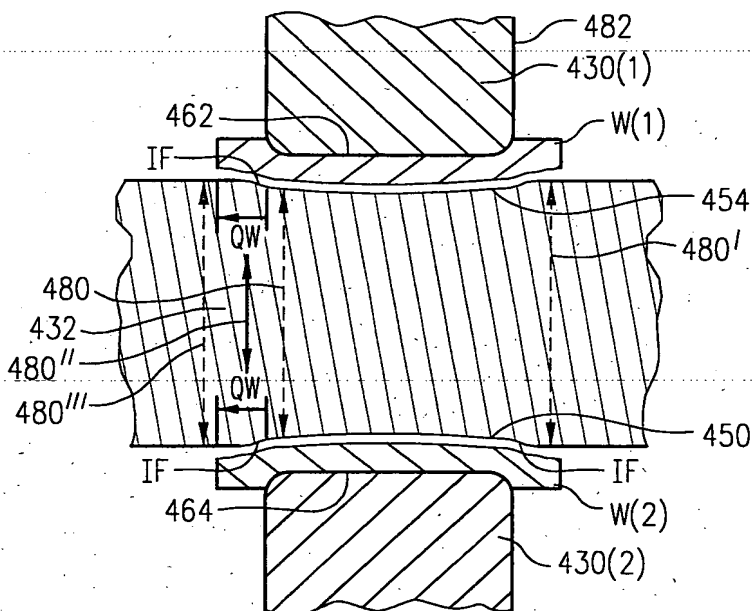


FIG. 32

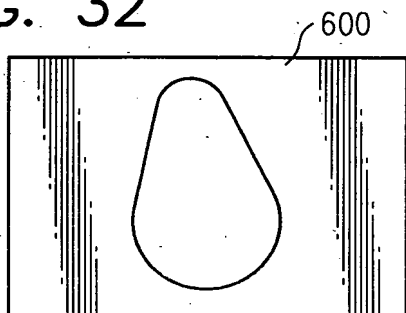
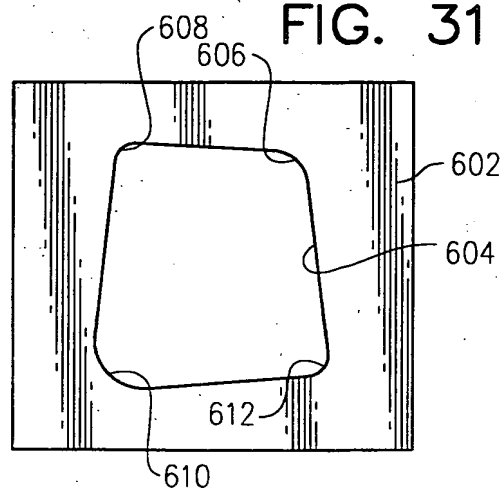


FIG. 31



# REPLACEMENT SHEET 5

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FIG. 21

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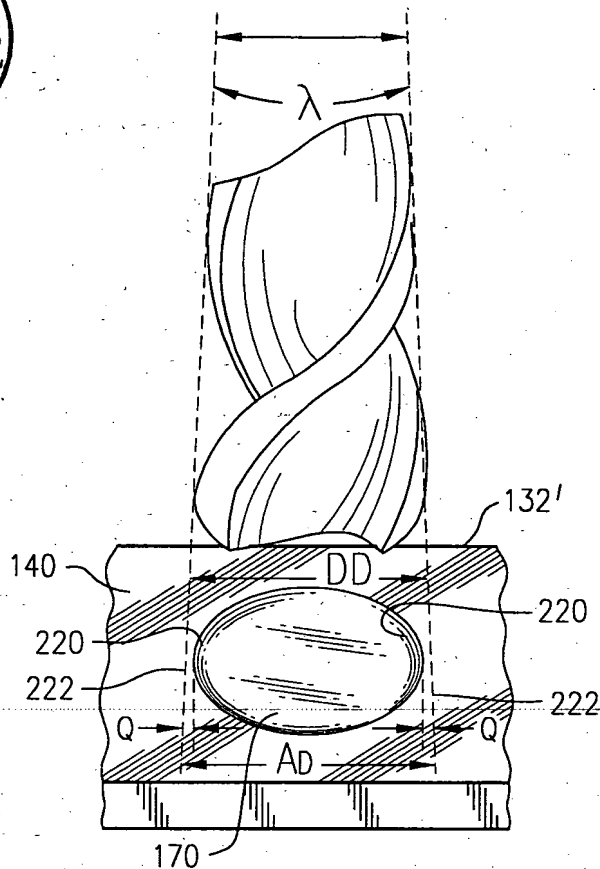


FIG. 22

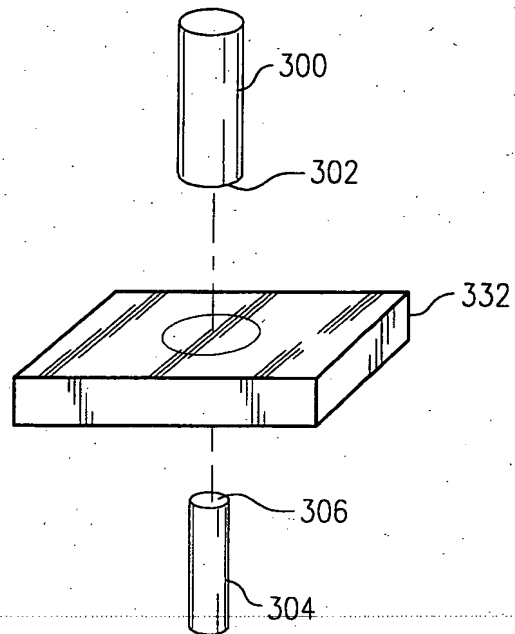


FIG. 24

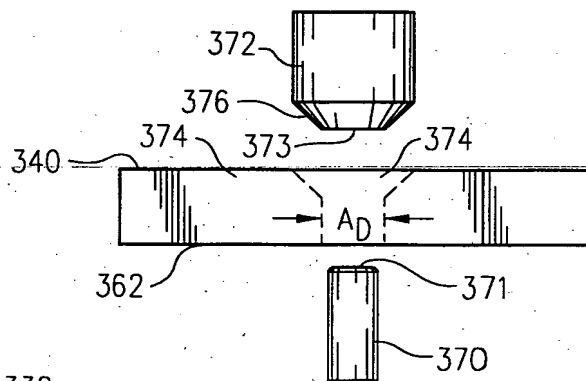


FIG. 23

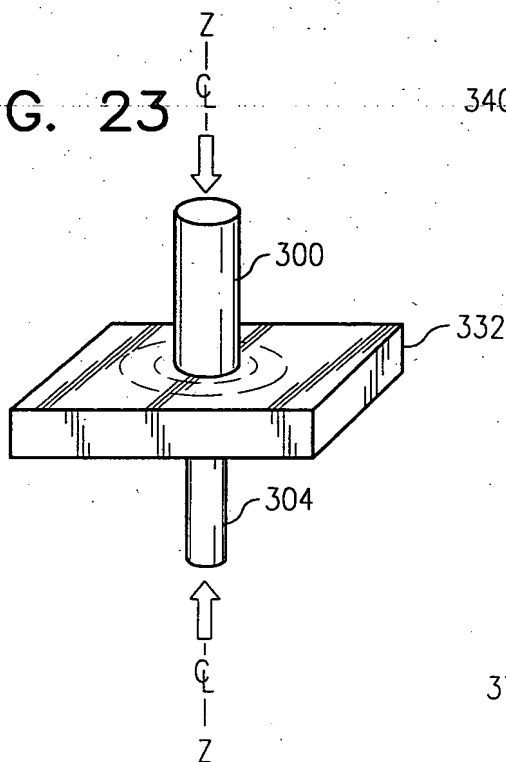
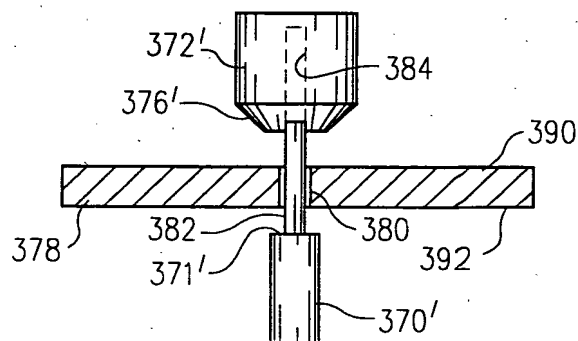


FIG. 25



# REPLACEMENT SHEET 2

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FIG. 6

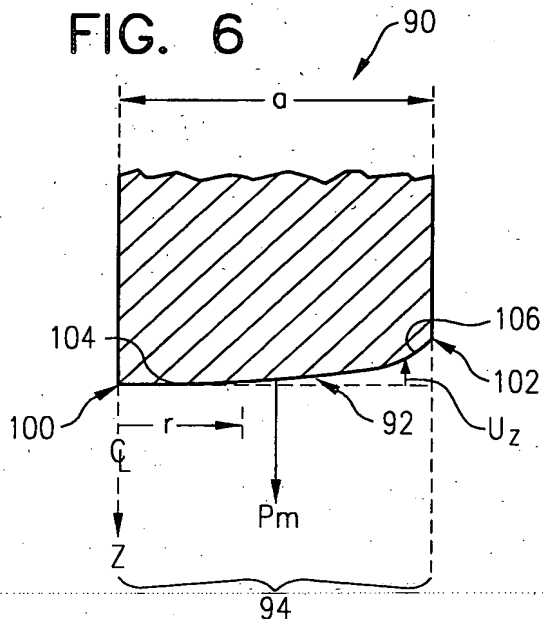


FIG. 7

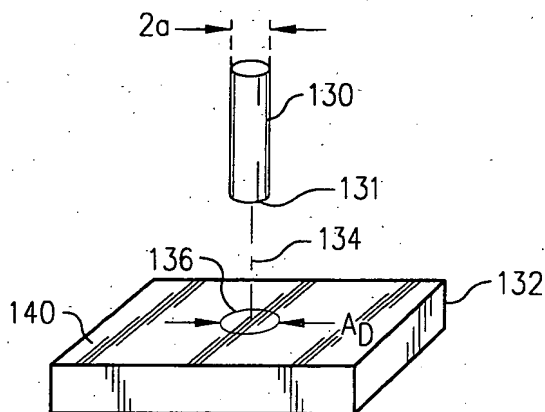


FIG. 9

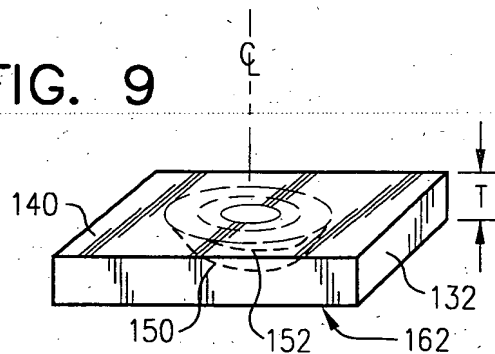


FIG. 8

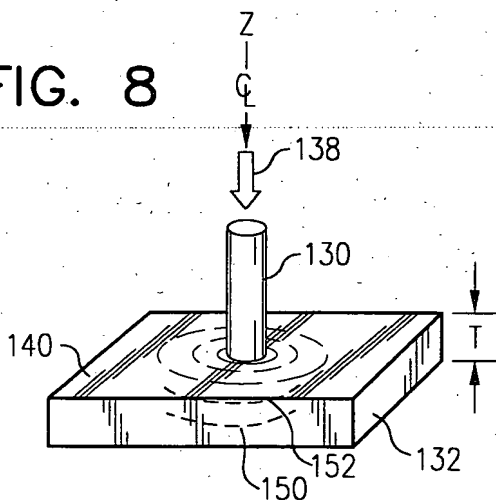
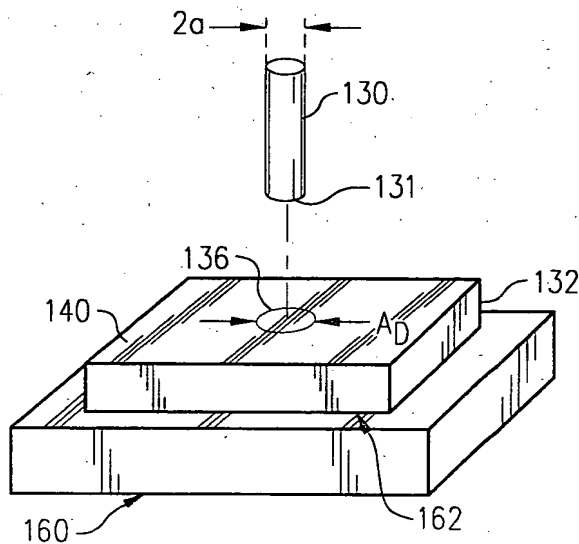


FIG. 10



# REPLACEMENT SHEET 21

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FIG. 55

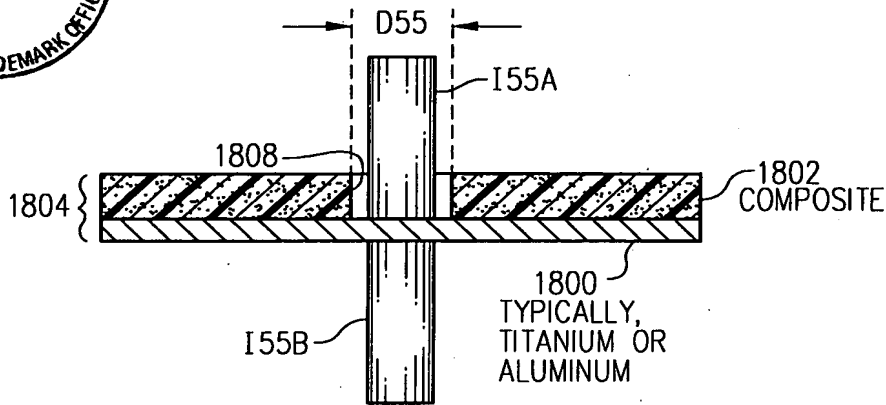


FIG. 56

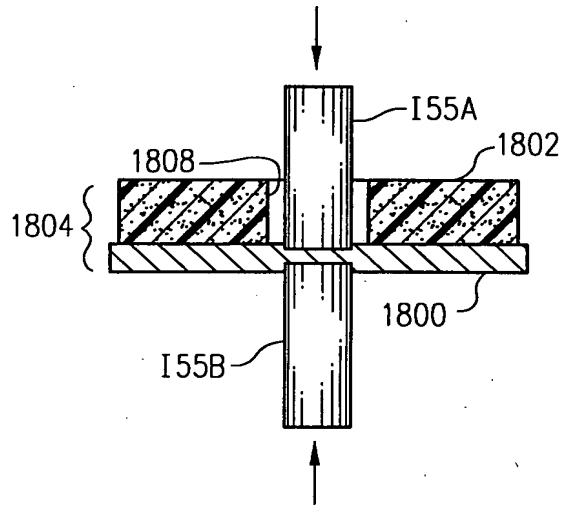


FIG. 57

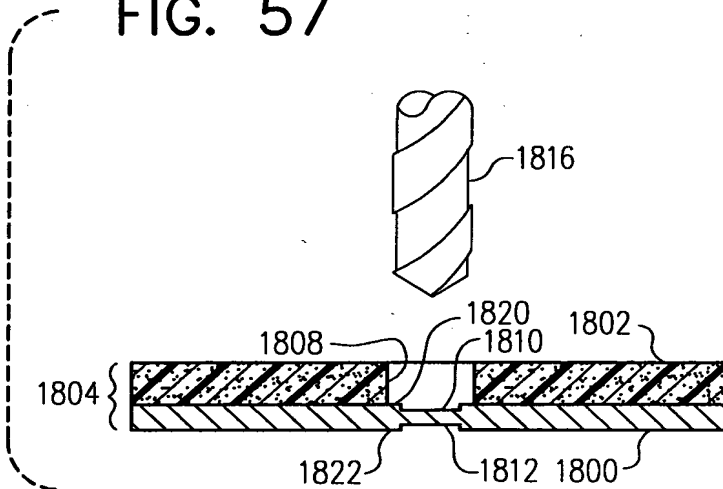
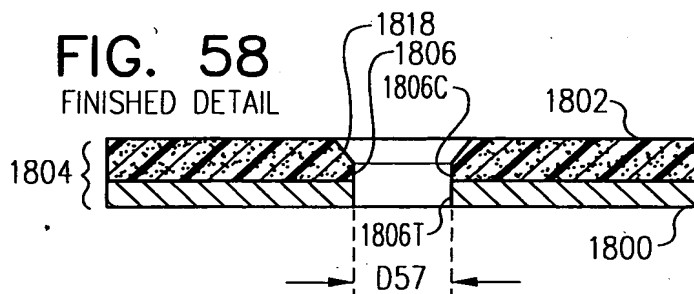


FIG. 58

FINISHED DETAIL



# REPLACEMENT SHEET 22

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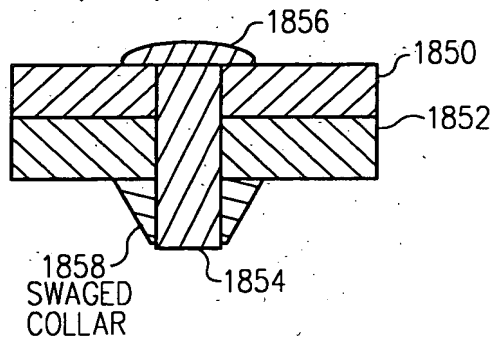
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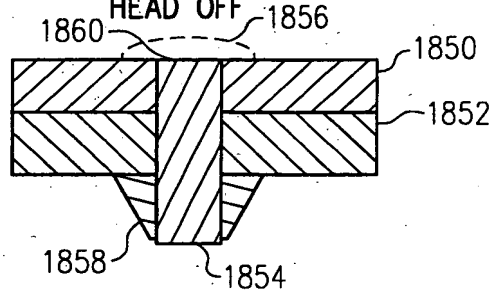
**FIG. 59**

TEMPORARY (TACK) FASTENER CONFIGURATION



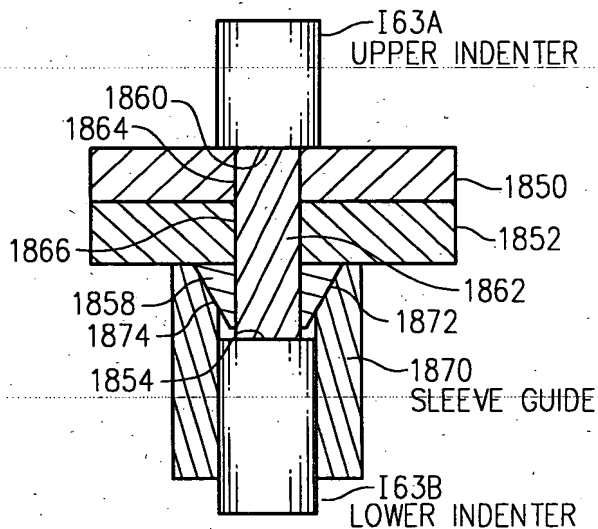
**FIG. 60**

SHAVE FASTENER  
HEAD OFF



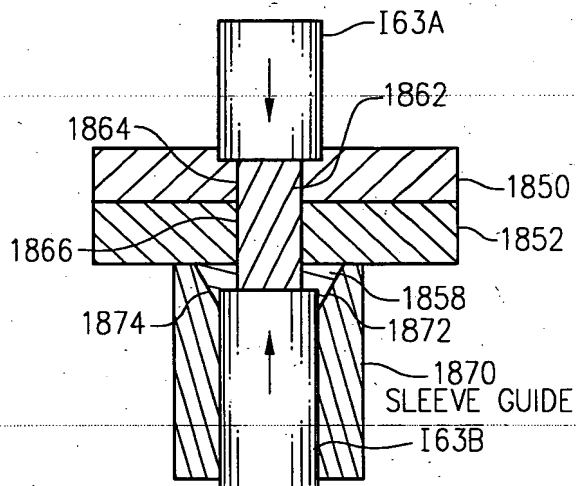
**FIG. 61**

ALIGN INDENTERS WITH  
TACK FASTENER CENTER



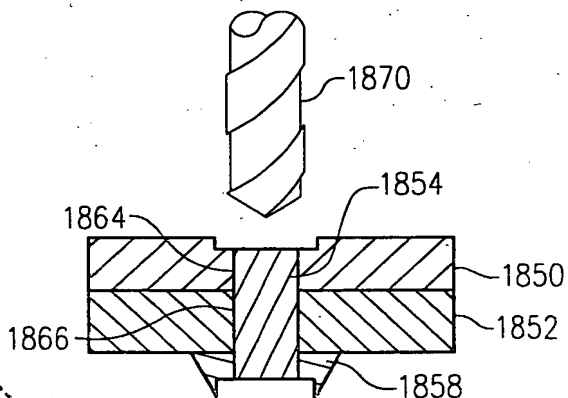
**FIG. 62**

ACTUATE INDENTERS



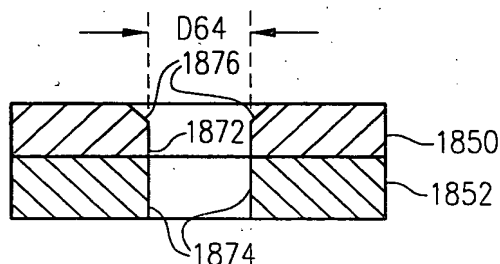
**FIG. 63**

DRILL TO BOLT DIAMETER



**FIG. 64**

FINISHED TREATED HOLE



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FIG. 65

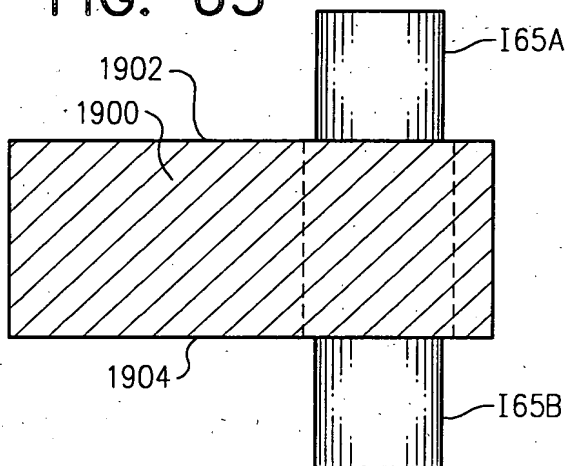


FIG. 66

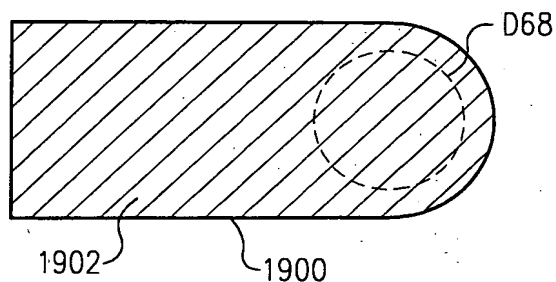


FIG. 67

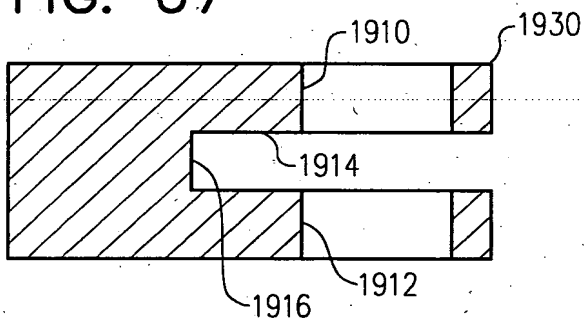
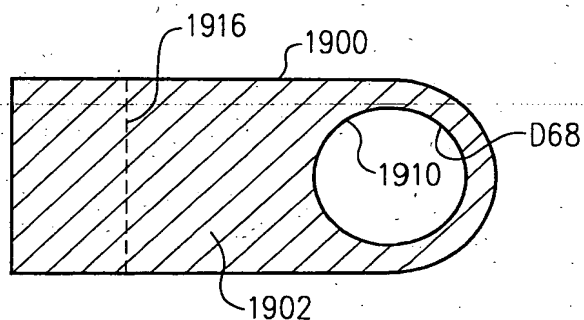


FIG. 68



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CROSS SECTION OF HOLLOW TUBE  
TREATED WITH INDENTER END SHAPE  
THAT CONFORMS TO TUBE DIAMETER

FIG. 75

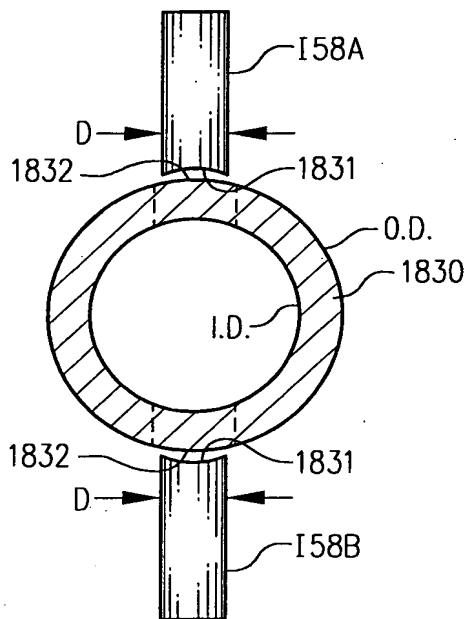


FIG. 76

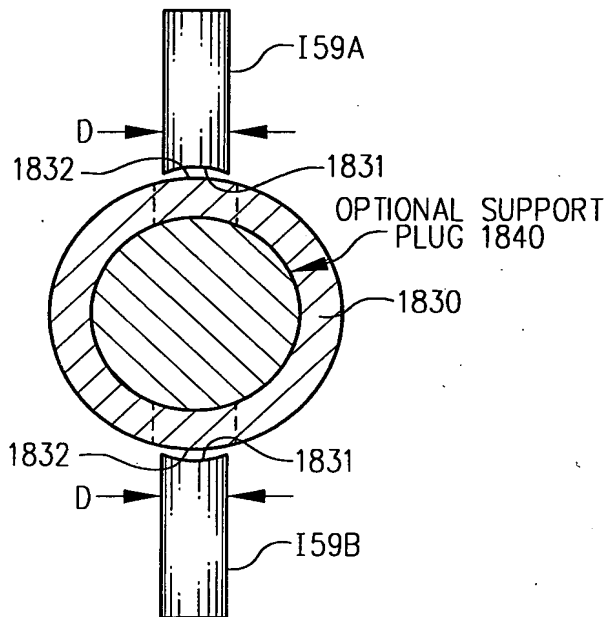
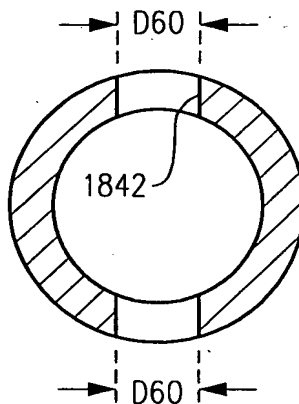


FIG. 77



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FIG. 131

INTERIM MACHINED CONFIGURATION

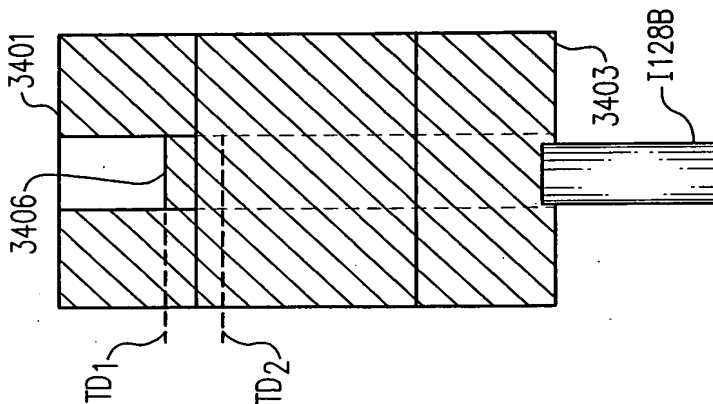


FIG. 130

SETUP STEP FOR MACHINING PARTIAL DEPTH

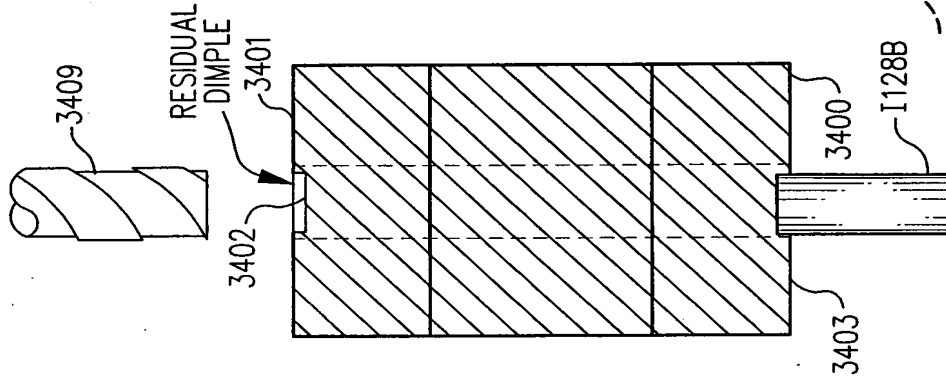


FIG. 129

REMOVE 1ST INDENTER  
UNLOAD 2ND INDENTER

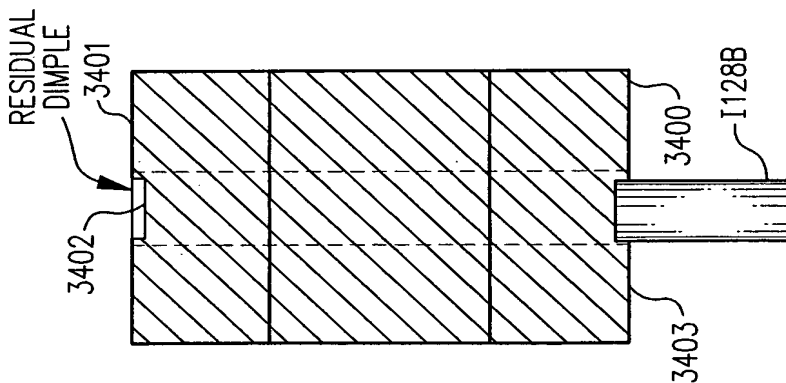
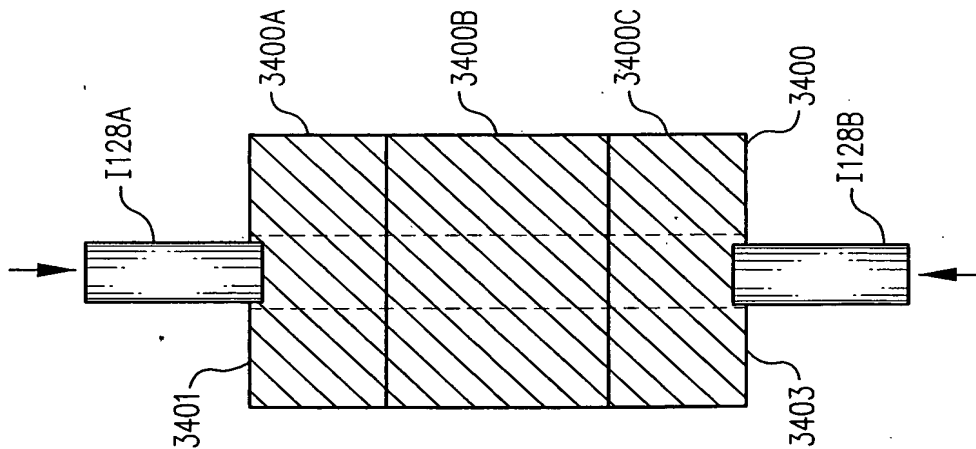


FIG. 128

ACTUATE INDENTERS





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Applicant: EASTERBROOK, Eric T.

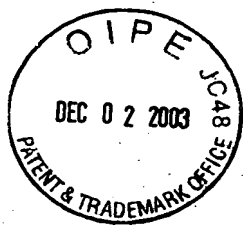
Title: METHOD AND

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Call: R. Reams Goodloe, Jr.

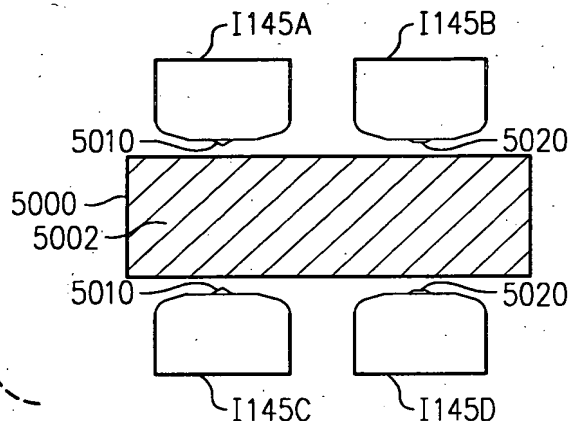
Reg. #32,466

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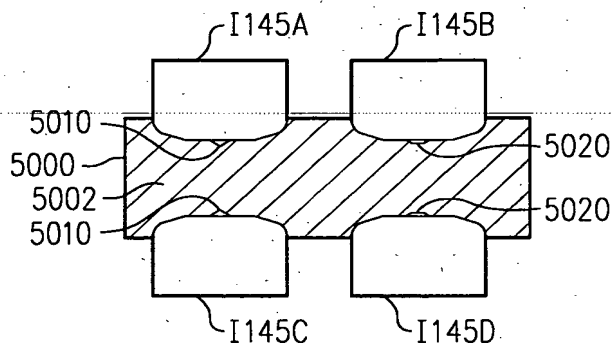
**FIG. 145**

SETUP STEP FOR TWO INDENTER END STYLES  
WITH DRILL ALIGNING FEATURE. ONE CONICAL AND  
THE OTHER TRUNCATED CONE



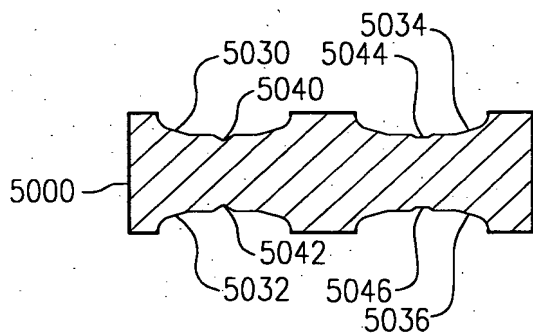
**FIG. 146**

ACTUATION OF INDENTERS INTO PART



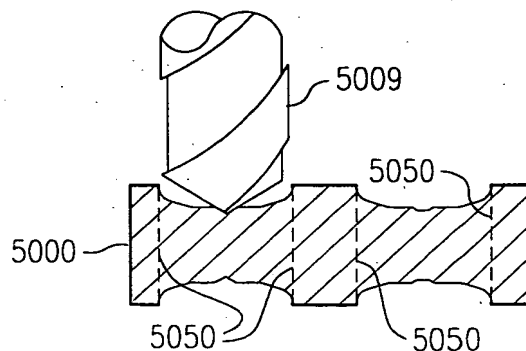
**FIG. 147**

CROSS SECTION OF DIMPLES  
AFTER TREATMENT AND  
INDENTER WITHDRAWAL



**FIG. 148**

DRILL OUT HOLE,  
DRILL CENTERS ON DIMPLE



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FIG. 149

SETUP STEP FOR TREATING PART  
WITH EXTRA THICKNESS USING  
INDENTERS MUCH LARGER THAN  
THE FINAL HOLE DIAMETER

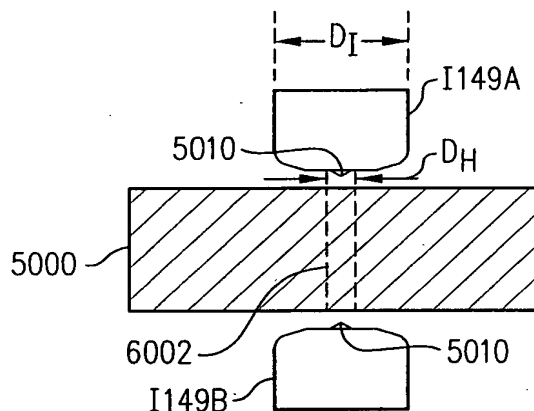


FIG. 150

ACTUATION OF INDENTERS INTO  
PART, EXTENT OF RESIDUAL STRESS  
WELL BEYOND THE FUTURE WALL OF  
THE SMALL DIAMETER HOLE

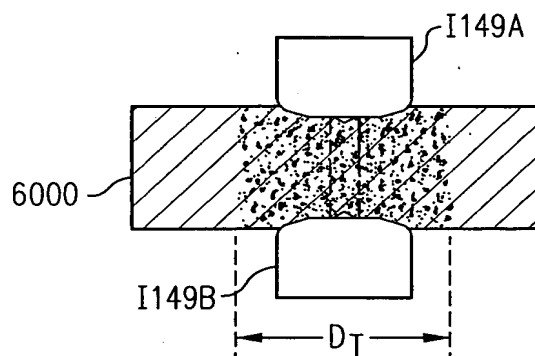


FIG. 151

MILL FRONT AND/OR BACK FACES  
OF STRUCTURE TO REMOVE  
DIMPLES—RESIDUAL STRESSES  
MAY RELAX SLIGHTLY

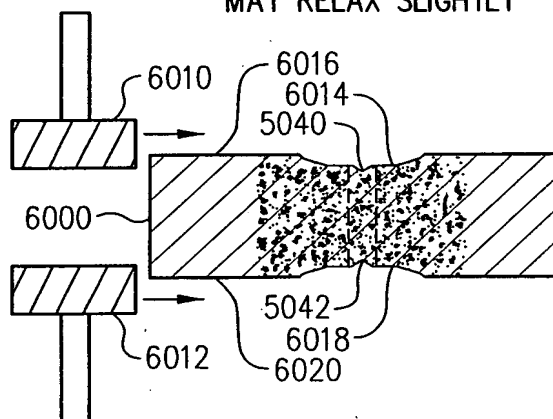


FIG. 152

DRILL OUT HOLE LEAVING  
LARGE ZONE OF COMPRESSIVE  
RESIDUAL STRESS

